

### Week 3 Situation Report RVIB Nathaniel Palmer, Elephant Island Grid, Antarctica



We have continued to sample the Elephant Island grid, having begun line 9 on 21 August. Owing to unusually calm conditions (most days wind were < 5 to 10 knots), we sampled along east-west transects to finish the more northern stations in the grid. Ice, transported north by the storms the previous week, was found throughout the area; in some eastern areas it was quite thick. Three east-west transects were completed, but few krill were collected despite the ice. A preliminary analysis of length data from the stations showed the range of krill extended from 24 to 54 mm, with more small krill found than larger krill. Chl-a biomass was high, exceeding 0.5 ug/L throughout the mixed

layer. Additionally, at a few stations a subsurface maximum in fluorescence was observed, coincident with a decrease in transmissivity, consistent with a subsurface chl-a maximum. Additionally, most of the net tows were filled with large amounts of filamentous algae, making sorting small zooplankton more difficult. Finally in this area, eight deep nets tows (to 650m) were conducted to collect information on the presence of krill and other animals below the surface layer. A fair number of mid-water fish were collected by our Italian colleague and will be used to examine age and growth. Stomach samples were preserved and will be sent to La Jolla for analysis. At two stations large jellyfish, one in excess of 200lbs, were caught, making quantitative analysis of the net data complicated.

Later in the week, we transited south of Elephant Island and began sampling in the Bransfield Strait. Net sampling was hampered by ice, and we were unable to deploy nets at several stations and had to deploy the vertical net at several more. Thus, only a few samples of krill have been collected in this region. We spent several mornings and afternoons collecting ice core data from a variety of ice types, and by a variety of means. Water from these samples will help to provide an index of the production within the ice that may be available for krill and other zooplankton.

We continue to have good weather but struggle with sampling within the ice. We hope to have the Elephant Island stations completed by Friday morning, and should be ready to try and calibrate at Admiralty Bay before proceeding to the west shelf during the final week of the survey.

From the RVIB Nathaniel B. Palmer

Christian Reiss

Included photo: The large jelly caught in the IKMT net.

Other details: We continue to collect krill for Bettina Meyer of the Alfred Wegener Institute. We have collected PRR data for SIO. We continue to get excellent support from the NOAA Weather Service and the National Ice Center.